Understanding the design research process: The evolution of a professional development program in Indian slums

Susan McKenney, Harini Raval & Jules Pieters
Curriculum Design & Educational Innovation
Faculty of Behavioral Sciences
Purpose and background of this presentation

- Share an example of design research and how it:
  - Produced knowledge about educating para-teachers in un(der) resourced settings using local talent and resources
  - Contributed to the design and development of a professional development program in an Indian urban slum

- Maitri
  - Educational NGO providing remedial services to support in-school learning through (among others) Urban Learning Centers (ULCs)
  - Staffed by young ladies with high school diplomas, some bachelors, no professional teaching qualifications
  - Program designed to support Maitri para-teachers in learner-centered teaching approaches
A typical slum
Outside a ULC class
Before:
Mixed-age classroom; inefficient individualized teaching
During:
Micro-teaching sessions as part of PD program
After:

Children model water reservoir in science class
Design research approach used

Generic model for educational design research (McKenney & Reeves, in preparation)
Methods used in this 5-year study

- 7 sub-studies (white boxes above)
- Research methods per phase shown in grey boxes
- Conducted from integrated perspective but reported separately through articles (all but last one submitted so far); today we look at big picture

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<th>Analysis &amp; Exploration</th>
<th>Design &amp; Construction</th>
<th>Evaluation &amp; Reflection</th>
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<td>Learning needs and context analysis; Design framework underpinning professional development program</td>
<td>Design 1 evaluation (pilot); Design 2 evaluation (institutionalization); Design 3 evaluation (summative)</td>
<td>Impact evaluation 24 months support subsided; Systematic reflection to distill design heuristics</td>
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<td>- Management interviews</td>
<td>- Document review</td>
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Analysis & exploration

- Needs and context analysis: characteristics of
  - Para-educators themselves
  - Classroom composition and teaching strategies
  - Organizational characteristics
  - Policy influences

- Design framework underpinning program
  - Plan-enact-reflect
  - Supported by workshops, micro-teaching and coaching, respectively
Design and (re)construction

- **Design 1: Pilot**
  - During summer vacation, one month, 9 teachers followed, researcher-led
  - Para-teachers learned to plan and felt immediate improvements in classwork

- **Design 2: Institutionalization**
  - Location managers collaborated with researcher, during school year
  - Maitri made adjustments to enable program and vice versa

- **Design 3: Final version**
  - Researcher stepped fully back, location managers worked independently
  - Planning, enactment and large effect sizes in pupil learning data showed positive results
Evaluation & reflection

- Impact study
  - Two years after all support had been withdrawn
  - Program was fully retained
- Reflection to produce design heuristics, e.g.:

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<th>Characteristics of professional development (PD)</th>
<th>Theoretical support</th>
<th>Empirical support</th>
<th>Substantive design guidelines</th>
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<td>Guided by individual as well as contextual (organizational) requirements</td>
<td>PD should be informed by specific needs of the participants (Kubitskey &amp; Fishman, 2005); that is, existing knowledge and beliefs of teachers as well as the context (Loudon-Hartley, 1998).</td>
<td>Learning requirements of para-educators were identified (e.g., working with heterogeneous classes) and enactment gaps identified in practice (incoherent teaching) (Section 2.5.2). Contextual characteristics, especially organizational constraints which potentially had substantial influence on professional development, were identified (2.5.2).</td>
<td>- Define individual learning requirements based on what teachers express as well as what their actual classroom practices reveal. - Identify strengths and weaknesses of the local context, e.g., organizational factors, that could impact teacher learning.</td>
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<td>During PD, central importance to learning processes of teachers and the particular curricular and school contexts in which professional development takes place (Fenual, et al., 2007)</td>
<td>Core and supportive strategies addressed individual learning needs in different ways (4.4.1) and organizational changes played an important role in supporting para-teacher learning (5.4.4.)</td>
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<td>- Aim to (re)design necessary learning activities as well as meet (contextual) organizational requirements necessary.</td>
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Discussion

- Inviting collaboration of stakeholders
  - “I have often encountered a feeling that our fuzzy ground realities are almost a botheration and a hindrance to the researchers in seeking their objective, as if it compromises their quest, as if they have to come and first clean up my kitchen to be able to work in it, and that often leaves us practitioners feeling undermined and in an unequal position with them; but this experience truly put us on an equal platform.”

- Institutional capacity building
- Multiple roles (designer, facilitator, consultant, evaluator)
- Over-simplistic expectations from the field
- Quick iterations
Next steps: Continuing design research on para-educator professional development in a new setting

- Center for learning resources (CLR)
  - Early childhood para-teachers
  - Extremely impoverished, extremely rural tribal villages
- Different context; same basic approach (cf. Reinking & Bradley, 2008)
  - Intervention-centered
  - Theoretical
  - Goal-oriented
  - Adaptive and iterative
  - Transformative
  - Methodologically inclusive and flexible
  - Pragmatic
Thank you! More information?

- HariniRaval@gmail.com
- Susan.McKenney@utwente.nl
- J.M.Pieters@utwente.nl